

# Electronic Correlated Noise Calibration Standard for Interferometric and Polarimetric Microwave Radiometers, Phase II

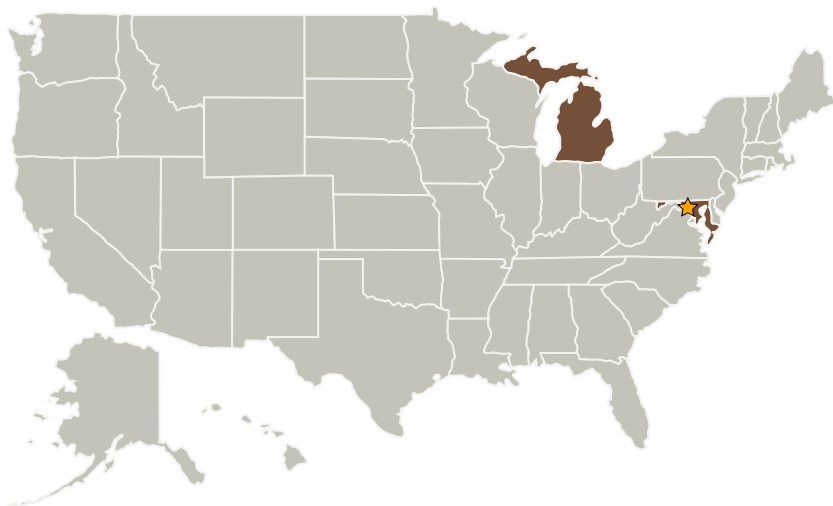
Completed Technology Project (2005 - 2007)



## Project Introduction

A new type of calibration standard is proposed which produces a pair of microwave noise signals to aid in the characterization and calibration of correlating radiometers. The proposed Correlated Noise Calibration Standard (CNCS) is able to generate pairs of broad bandwidth stochastic noise signals with a wide variety of statistical properties. The CNCS can be used with synthetic aperture interferometers to generate specific visibility functions. It can be used with fully polarimetric radiometers to generate specific 3rd and 4th Stokes parameters of brightness temperature. It can also be used with spectrometers to generate specific power spectra and autocorrelations. It is possible to combine these features and, for example, generate the pair of signals that would be measured by a fully polarimetric, spectrally resolving, synthetic aperture radiometer at a particular pair of polarizations and antenna baselines for a specified scene over a specified frequency band. The proposed CNCS will cover all the frequencies used for radiometric observations in the 1 to 40 GHz range. In specific, the Phase II project will develop the system prototypes for L and X bands. While intended for ground based characterization of radiometer systems, the technological approach is amenable to on-orbit calibration.

## Primary U.S. Work Locations and Key Partners



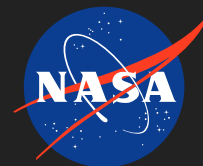
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## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	2
Project Management	2
Technology Areas	2

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
EMAG Technologies, Inc.	Supporting Organization	Industry	Ann Arbor, Michigan

Primary U.S. Work Locations	
Maryland	Michigan

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Goddard Space Flight Center (GSFC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.1 Remote Sensing Instruments/Sensors
    - └ TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves